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Jyh-Shin Pan

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EXAMINER

BATTAGLIA, MICHAEL V

ART UNIT

PAPER NUMBER

2652

DATE MAILED: 09/10/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/800,896

Applicant(s)

PAN ET AL.

Examiner

Michael V Battaglia

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 12 August 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-36 is/are pending in the application.
- 4a) Of the above claim(s) 1-6, 12-18, 20 and 21 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 7, 19, 22, 23 and 29-36 is/are rejected.
- 7) ☒ Claim(s) 8-11 and 24-28 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 08 March 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 2, 4 and 6.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

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### DETAILED ACTION

This action, dated August 30, 2004, is in response to Applicant's election, filed August 10, 2004. Claims 1-36 are pending.

#### *Election/Restrictions*

1. Applicant's election **without** traverse of Species 3 in the reply filed on August 10, 2004 is acknowledged. Claims 1-6, 12-18, 20 and 21 withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to nonelected species, there being no allowable generic or linking claim.

#### *Specification*

2. The specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

#### *Claim Rejections - 35 USC § 102*

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claim 22 is rejected under 35 U.S.C. 102(e) as being anticipated by Tsukihashi (US 6,587,416).

In regard to claim 22, Tsukihashi discloses an optical disk drive having a link writing function, comprising: an encoding link controller (Fig. 1, element 15) for positioning a link area for a succeeding writing and generating a succeeding writing signal; and a laser (Fig. 1, elements enclosed in dashed line) responsive to the succeeding writing signal, the laser powered in a succeeding writing process to provide laser power to an optical disk at a successive writing position (Fig. 2, start of element 120) spaced from an end of data (Fig. 2, end of element 110) written prior to a data writing interruption by an amount equal to or greater than a maximum run length value of the drive (Fig. 2), the laser writing interrupted data frames and successively written data frames that can together be successfully error-correction processed (Col. 4, lines 63-66). It is noted that the drive is a CD-R drive (Col. 2, line 35), which has a maximum run length value of 11T. The two blocks of zeros (Fig. 2, element 150) are interpreted as greater than a maximum run length value of the drive.

4. Claims 30 and 31 are rejected under 35 U.S.C. 102(e) as being anticipated by Andoh (US 6,266,308).

In regard to claim 30, Andoh discloses an optical disk drive device (Fig. 1, element 1) having a link writing function, comprising an encoding link controller (Fig. 2, element 13), responsive to a data writing interruption and a successive determination that data writing can resume (Col. 15, lines 39-46), the encoding link controller detecting a pattern from signals read from a disk indicative of the end of a previous interrupted data writing (Col. 21, lines 11-17), the pattern characterized by being detectable as being different from

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normally written data (Col. 21, lines 15-18), the encoding link controller generating a start writing signal in response to detecting the pattern so that the device subsequently initiates a succeeding writing process in response to the start writing signal (Col. 21, lines 52-63).

In regard to claim 31, Andoh discloses a microcontroller (Fig. 1, element 13) coupled to the encoding link controller, the microcontroller initiating the succeeding writing process in response to the start writing signal (Col. 5, lines 41-43). The part of Fig. 1, element 13 that detects the pattern and generates a start writing signal is interpreted as the encoding link controller and the part of Fig. 1, element 13 that initiates the succeeding writing process in response to the start writing signal is interpreted as the microcontroller.

### ***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 7, 19, 23 and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamamoto (US 6,198,707) in view of Andoh (US 6,266,308).

In regard to claim 7, Yamamoto discloses a link writing method for a recordable or rewritable optical disk comprising: recording an interrupted position by storing values of an interrupted sector, an interrupted data frame, and an interrupted bit count when data under-run or other interruption occurs (Col. 7, lines 1-8); and enabling a succeeding writing process after the writing interruption (Col. 5, lines 21-27), the succeeding writing process comprising: detecting an end portion of recorded data (Fig. 9 and Col. 7, lines 1-6);

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enabling a start writing signal (Col. 7, lines 7, lines 15-18); and activating a laser power (Fig. 6), wherein the linking area is linked to the interrupted position so that interrupted data together with successively written data can be successfully error-correction processed (Fig. 6 and Col. 6, lines 2-16). Values of an interrupted sector, an interrupted data frame, and an interrupted bit count are inherently stored when data under-run or other interruption occurs because the offsets of the frame and bit are available when writing is restarted and the address of the start sector is detected (Col. 7, lines 1-8). Yamamoto does not disclose that the writing process comprises searching a linking area by comparing a read data length with a maximum run-length value.

Andoh discloses searching a linking area by comparing a read data length with a maximum run-length value (Col. 21, lines 11-17). The period of the read data is interpreted as the read data length. The read data length must be compared with the maximum run-length value of  $11T$  to determine if the read data length is one of  $3T-11T$ . Andoh teaches that by searching a linking area by comparing a read data length with a maximum run-length value, the time required to detect the end portion of recorded data is shortened (Col. 2, lines 6-12).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate into the writing process of Yamamoto the searching a linking area by comparing a read data length with a maximum run-length value of Andoh, the motivation being to shorten the amount of time required to detect the end portion of recorded data.

In regard to claim 23, Yamamoto discloses a link writing method for a recordable or rewritable optical disk comprising: determining an interrupted position corresponding to

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a writing interruption for an optical disk (Col. 7, lines 1-8); and enabling a succeeding writing process after the writing interruption (Col. 5, lines 21-27), the succeeding writing process comprising: detecting an end portion of recorded data (Fig. 9 and Col. 7, lines 1-6); enabling a start writing signal (Col. 7, lines 7, lines 15-18); and activating a laser power (Fig. 6), wherein the linking area is linked to the interrupted position so that interrupted data frames and successively written data frames together form interrupted and successively written data frames that can be successfully error-correction processed (Fig. 6 and Col. 6, lines 2-16).

Andoh discloses searching a linking area by comparing a read data length with a maximum run-length value (Col. 21, lines 11-17). The period of the read data is interpreted as the read data length. The read data length must be compared with the maximum run-length value of 11T to determine if the read data length is one of 3T-11T. Andoh teaches that by searching a linking area by comparing a read data length with a maximum run-length value, the time required to detect the end portion of recorded data is shortened (Col. 2, lines 6-12).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate into the writing process of Yamamoto the searching a linking area by comparing a read data length with a maximum run-length value of Andoh, the motivation being to shorten the amount of time required to detect the end portion of recorded data.

In regard to claims 19 and 29, Andoh discloses that the interrupted and successively written data is such that the data frame that is successfully CIRC processed (Col. 4, line 66 and Col. 6, lines 1-16).

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6. Claim 32 is rejected under 35 U.S.C. 103(a) as being unpatentable over Andoh in view of Tsukihashi.

Andoh discloses the limitations of base claim 30 as noted above. Andoh does not disclose that the device initiates writing the pattern onto the disk after the data writing interruption.

Tsukihashi discloses having an optical disc drive device (Fig. 1) that initiates writing of a pattern onto the disk after the data writing interruption (Fig. 2, element 150), wherein the pattern is indicative of the end of a previous interrupted data writing and characterized by being detectable as being different from normally written data (Col. 7, lines 19-23). Tsukihashi teaches that the pattern, written at the end of a previous interrupted data writing, allows the discontinuous portion to be easily detected (Col. 7, lines 19-21).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have the device of Andoh initiate writing of the pattern of Tsukihashi onto the disk after the data writing interruption as suggested by Tsukihashi, the motivation being to allow easy detection of the discontinuous portion at the end of a previous interrupted data writing.

7. Claims 33-34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Andoh in view of Tsukihashi as applied to claim 32 above, and further in view of Abe (US 5,784,355).

In regard to claim 33, Tsukihashi in the optical disc storage art discloses that pattern is two blocks of zero data (Col. 6, lines 50-52). It is noted that the length of two blocks is greater than a maximum run length value. Tsukihashi does not disclose that the zero data consists of a high reflectivity pattern.



Abe in the optical disc storage art discloses zeros that are recorded in a well-known manner as a state of high reflectivity (Col. 5, lines 48-49).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made for the two blocks of zero data of Andoh in view of Tsukihashi to consist of a high reflectivity pattern as suggested by Abe, the motivation being to implement the invention of Tsukihashi by recording the zero data in a well-known manner suggested by Abe in optical disc storage.

In regard to claim 34, Andoh discloses that the disc is rewritable (Col. 22, line 45).

8. Claims 35-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Andoh in view of Tsukihashi as applied to claim 32 above, and further in view of Kawamura (US 4,982,077).

In regard to claim 35, Tsukihashi in the optical disc storage art discloses that pattern is two blocks of zero data (Col. 6, lines 50-52). It is noted that the length of two blocks is greater than a maximum run length value. Tsukihashi does not disclose that the zero data consists of a low reflectivity pattern.

Kawamura in the optical disc storage art discloses zeros that are recorded in a well-known manner as a state of low reflectivity (Col. 4, lines 56-59).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made for the two blocks of zero data of Andoh in view of Tsukihashi to consist of a low reflectivity pattern as suggested by Kawamura, the motivation being to implement the invention of Tsukihashi by recording the zero data in a well-known manner suggested by Kawamura in optical disc storage.

In regard to claim 36, Andoh discloses that the disc is rewritable (Col. 22, line 45).

*Citation of Relevant Prior Art*

9. Park (US 6,728,180) discloses a blank detection circuit that determines a blank area by comparing a data length to a predetermined value (Col. 4, lines 46-53). Horiguchi (US 5,144,610) checks to see if a sector is blank by scanning the sector and then back tracks to record the sector (Abstract). Hyun (US 6,538,962) discloses interrupting recording in the event of a buffer-underrun and recording dummy data to the end of the partially recorded block after an interruption. Kuroda et al (US 5,815,472) discloses in interrupting recording in the event of a buffer-underrun and recording over previously recorded data in the sector in which the interrupt occurred (Fig. 5B).

*Allowable Subject Matter*

10. Claims 8-11 and 24-28 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

In regard to claim 8, none of the references of record alone or in combination disclose or suggest a link writing method for a recordable or rewritable optical disk comprising: recording an interrupted position by storing values of an interrupted sector, an interrupted data frame, and an interrupted bit count when data under-run or other interruption occurs; and enabling a succeeding writing process after the writing interruption, the succeeding writing process comprising: searching a linking area by comparing a read data length with a maximum run-length value; enabling a start writing signal; and activating a laser power, wherein the linking area is linked to the interrupted position so that interrupted data together with successively written data can be successfully

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error-correction processed; wherein the searching the linking area comprises: **reading values of the interrupted sector, the interrupted data frame, and the interrupted bit count of the interrupted area; setting values of a starting block, a starting data frame, a starting bit count of a writing starting area, and the maximum run-length value; and detecting where the read data length is greater than the maximum run length value and setting the linking area in response thereto.**

In regard to claim 24, none of the references of record alone or in combination disclose or suggest a link writing method for a recordable or rewritable optical disk comprising: determining an interrupted position corresponding to a writing interruption for an optical disk; and enabling a succeeding writing process after the writing interruption, the succeeding writing process comprising: searching a linking area by comparing a read data length with a maximum run-length value; enabling a start writing signal; and activating a laser power, wherein the linking area is linked to the interrupted position so that interrupted data frames and successively written data frames together form interrupted and successively written data frames that can be successfully error-correction processed wherein the searching the linking area comprises: **setting values of a starting block, a starting data frame, a starting bit count of a writing starting area according to the values of the interrupted sector, the interrupted data frame, the interrupted bit count of the interrupted area, and the maximum run-length value; and detecting where the read data length is greater than the maximum run length value and setting the linking area in response thereto.**

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*Conclusion*


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael V Battaglia whose telephone number is (703) 305-4534. The examiner can normally be reached on 5-4/9 Plan with 1st Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hoa T Nguyen can be reached on (703) 305-9687. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Michael V. Battaglia

  
W. R. YOUNG  
PRIMARY EXAMINER